AUBURN
SOUNDS
Audio plugins with care

PANAGEMENT USER MANUAL

Version 1.3

Foreword

Thank you for using AUBURN SOUNDS® PANAGEMENT.

PANAGEMENT is a replacement for our previous PSYPAN plugin, yet offers much more. **It is a whole spatialization powerhouse** that lets you control the stereo space from your armchair, with deceptively few knobs to turn:

- The **distance fader** brings a track nearer or further,

- The **panner** positions that track **binaurally** from left to right,

- The **mono-to-stereo** enlarges a thin track or simulates reflections,

- The **tilt filter** adjusts spectral balance between lows and highs,

- The **phasescope** control displays mono compatibility visually,

- Finally, a **LFO** allows to create periodic or even **random** moves.

PANAGEMENT is more about practicality than pure realism. If some technique would be more realistic but has practical drawbacks (like sampled HRTF), then we didn't include it.

A lot of **care** has been spent ensuring the utmost transparency:

- Latency was brought down to 3 samples,

- Only gentle filters were used to minimize phase distortion,

- And by default, the signal is kept untainted.

For the best results, we strongly recommend to put your favourite reverb effect after PANAGEMENT.

Credits

PANAGEMENT was defined and iterated with beta-testers much more than any plugin I made before. Of course I still do all of the work but the continuous exchange we had along the way were incredibly valuable. I wouldn't be this happy with the results without these healthy discussions!

In particular I'd like to thank Ryan Clough, Ian Marquis and Denis Morin for their careful reviews and ideas.

If you too are interested in shaping future plugins, I'm always on the lookout for new ideas and forward-thinking producers.

Development, UI, DSP

- Guillaume Piolat

Beta Testers

- Marie Charmoillaux
- Ryan Clough
- Ian Marquis
- Denis Morin
- Gilles Richardot

Special thanks goes to Mickael Istria, Martin Kirchgessner, Elsa Léger, Etienne Millon, Mayrik Padey and Quentin Sabah for kindly hosting me for coworking!

I'd also like to thank helpful members of the D community, in particular all of the LDC team which made this plugin fast.

Also thanks to all friends, family members, and supporters that didn't make it in this list. I'll never forget your support.

Versions

PANAGEMENT is available in different versions:

- **Panagement EE (Enterprise Edition)** has all the features.
- **Panagement FE (Free Edition)** only gets the distance and pan fader.

Compatibility

PANAGEMENT is available as a **32-bit and 64-bit VST2 / Audio Unit / AAX plugin** for Mac and Windows computers.

More specifically:

- Windows minimum supported version is **Windows Vista+**
- Mac OS X minimum supported version is **OS X 10.8+**

PANAGEMENT has been tested with a wide variety of Digital Audio Workstations (DAW). However if you find out your DAW isn't supported, **please report a bug** at **contact@auburnsounds.com**.

Supported sampling rates range from 22050 kHz to 384 kHz.

Installation

For Windows users:

- VST: Copy the 32-bit VST or 64-bit VST DLL to your VST2 directory.

- AAX: **Auburn Sounds Panagement.aaxplugin** to your AAX directory:

  - `C:\Program Files\Common Files\Avid\Audio\Plug-Ins`

For Mac OS X users (VST2):

- Copy **Auburn Sounds Panagement.vst** to your VST2 directory:

  - `/Library/Audio/Plug-Ins/VST`

For Mac OS X users (Audio Unit):

- Copy **Auburn Sounds Panagement.component** to your AU directory:

  - `/Library/Audio/Plug-Ins/Components`

- **(High Sierra users)** Reboot your computer after the copy.

For Mac OS X users (AAX):

- Copy **Auburn Sounds Panagement.aaxplugin** to your AAX directory:

  - /Library/Application Support/Avid/Audio/Plug-Ins

So what does PANAGEMENT do exactly?

When entering PANAGEMENT, the sound is processed by a series of mostly uncorrelated effects. **The signal path is drawn on the interface with little arrows.**

Each effect will now be described in processing order.

Distance fader

For "Far" settings the **Distance** effect is a combination of volume fading, lowpass and highpass filtering.

For "Near" settings the **Distance** effect is a combination of volume fading and a low-shelf boost to emulate the proximity effect.

Additionally "Near" settings nullify the **Head Delay** and **Spectral** parameters of the binaural panner (described below)**.** This produces a feeling of entering into the listener's head.

Input Stereo Width

Setting the **Width** parameter scales the Side signal from 0 to 200%. On 0% the signal is reduced to mono which helps with precise sound localization.

If the input signal is already mono, this knob does nothing.

Mono-to-Stereo

This effect mixes 6 taps of delayed, lowpassed Mid signal into the Side signal. Because only the Side signal is affected, this processor does not create mono compatibility problems. It was designed to be safe even for low-frequency content.

Mono-to-Stereo has two purposes:

- Enlarging a signal that is too much mono with pseudo-stereo,

- Simulating early reflections to enhance the **Distance** effect.

Amount: controls the amount of added signal,

Delay: base delay for the delay taps,

Cutoff: cutoff frequency for the added delayed signal.

Tilt Filter

When turned to the left, **Tilt** decreases lows by 6 dB and increases highs by 6 dB.

When turned to the right, **Tilt** increases lows by 6 dB and decreases highs by 6 dB.

The **Tilt Filter** has a fixed cutoff frequency of 650 Hz.

Binaural Pan

This effect affects volume, delay and spectrum of the left and right channels to create a stunning impression of space when wearing headphones.

Pan Knob: amount of pan from left to right.

Head Delay: scales the Interaural Time Difference (ITD) from 0% to 200%. At 100%, Head Delay is tuned for a head circumference of 57.4 cm, around 0.65 ms. This parameter creates the most mono incompatibility so be careful!

Spectral: scales the spectral effect from 0% to 200% frequency for the added delayed signal. This is a shelf filter centered on 4000 Hz that simulates head masking.

This processor has been tuned to feel natural and gentle for most people. You can usually keep default values of **Head Delay** and **Spectral**.

LFO

Shape: selects a sine, triangle, square, saw or random as a waveform for the LFO. The random LFO shape should be different for each plugin instance.

Synchronization: this blue/orange switch selects whether the LFO is synchronized (blue) or free-running (orange).

Tempo: when the LFO is synchronized, selects its tempo.

Frequency: when the LFO is free-running, selects its frequency.

LFO-to-Pan: the LFO controls the panning effect.

LFO-to-Distance: the LFO controls the distance effect.

LFO-to-Gain: the LFO does amplitude modulation on the output.

LFO-to-Tilt: the LFO modulates Tilt filter.

Phase: changes phase of the LFO for all targets **except LFO-to-Pan**.

Output

Level fader: allows to regain some of the energy lost with the distance.

Dry/Wet: scales all parameters effectiveness from 0 to 100%.

Mono: converts the signal back to mono. This is handy to check for mono compatibility.

10 Tips to get the most out of PANAGEMENT

Tip #1: Making circles

- Modulate **Pan** with the LFO

- Modulate **Distance** with the LFO

- Turn the LFO **Phase** knob half-way left or right

Tip #2: Making mono compatibility great again

Binaural panning has the potential to create anti-phase energy. This is a problem if you want to keep mono-compatibility. To hear what would be lost in the process, enable the **Mono** switch.

There are 3 ways to lessen the adverse effects of binaural panning:

- decrease **Head Delay**

- decrease **Spectral**

- modulate pan with the **LFO**

Why modulate **Pan** with the LFO? The reason is it'll sound like a phaser rather than a static comb filter when reduced in mono.

However, you must be aware that...

Tip #3: Binaural Pan may sound clearer when not modulated

The delay interpolation can lose up to 1 dB of high frequency content when modulated. Conversely, nothing is lost when not modulated.

Tip #4: Making a trance-gate

You can make trance-gate sounds with fast modulation of **Distance**, **Tilt** and **Gain** at the same time.

Tip #5: Bottom-left area

You might find that there is a hidden mini-game in the bottom-left area. It has no bearing on sound whatsoever. **It can be won.**

Tip #6: Panorama overview

The panorama control lets you set **Distance** and **Pan** in one click, while seeing LFO modulation at a glance.

Tip #7: Double-click is for reset

Double-clicking on a knob, slider or the Panorama controls resets a parameter to its original "do nothing" value.

Tip #8: Ping Delay with swapped L/R

When panning binaurally on the left, it gives a great sense of space to add a delayed version of that signal on the right. If you swap the Left and Right channel, it should stay binaural and come from the other direction, so you'll just have to delay.

Tip #9: Bring life to a dull drum track with a random LFO

What to do with a sampled drum track that is hopelessly mechanical and boring? You could tune the velocity of your hi-hat by hand. Or **just selects the random LFO shape** and use it for modulation.

Tip #10: Larger vocals with Mono–to–Stereo

That your vocal take is mono doesn't mean all its energy should be in the center.

- Set **Pan** to 0° (center) by double-clicking on it,

- Use the **Mono–to–Stereo** processor to get synthetic width.

Also works on kick drums!

Legal Information

- Auburn Sounds ® is a registered trademark of Guillaume Piolat. (2015).

- VST ® is a registered trademark of Steinberg Media Technologies AG.

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- AAX® is a registered trademark of Avid Technology.

Technical Information

- PANAGEMENT is built based on the open-source framework **Dplug,** a wild alteration of Cockos WDL.

Changelog

Version 1.3

- Add AAX Native and AAX AudioSuite support.

- Faster text drawing.

- Fix automation not recorded with panorama and LFO shape.

- Fix first transient attenuated.

- Fix crash in Vienna Ensemble Pro.

- Dropped support for Mac OS X 10.7.

Version 1.2

- Fix crash in macOS Sierra upon instantiation, all hosts.

- Panagement now uses 2x less memory.

Version 1.1

- Panagement now uses 40% less memory.

- **Fix Cubase crashes** in Windows and OS X.

- Fix Audition crash when processing a mono sample.

- Fix Apple Logic crash: threads would stay attached.

- Fix Audacity for Mac crash: was a multi-threading bug.

- Fix Digital Performer bug: no processing in Audio Unit.

- Fix pass-through of key presses to the host.

- Fix Ableton Live crash when scanning plugin.

- Fix slowness and partial update when UI is reopened.

- Changed the JPEG loader, 25% faster first UI load.

- Fix LFO not moving in Audio Unit.

- Fix LFO not moving when the host sequencer isn't playing.

Version 1.0

Initial release.